Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently amended) A computer-implemented method for selecting an obscured object in a three-dimensional computer-generated model, the method comprising:

    displaying the three-dimensional computer-generated model on a computer screen, wherein:

    the three-dimensional computer-generated model consists of a plurality of objects used to construct a part;~

    a first set of the plurality of objects when displayed obscures a second set of the plurality of objects;

    the first set of the plurality of objects comprises at least one face, having a visibility characteristic that may be independently changed; and

    the second set of the plurality of objects comprises at least one face, having a visibility characteristic that may be independently changed;

    receiving first input data interpreted as an instruction to change a visibility characteristic of a first one of the first set of the plurality of objects, the first one of the first set identified upon receiving the first input data and by determining that the first one of the first set shares a same location on the computer screen as a cursor;

    automatically modifying the visibility characteristic of the first one of the first set to cause a first one of the second set of the plurality of objects to be discernable;

    receiving second input data interpreted as an instruction to select the first one of the second set of the plurality of objects, the first one of the second set identified upon receiving the second input data and by determining that the first one of the second set shares the same location on the computer screen as the cursor; and

    designating the first one of the second set of the plurality of objects as a first selected object.

2

2. (Previously presented) The computer-implemented method of claim 1, wherein:

modifying the visibility characteristic automatically causes the first one of the first set of the

plurality of objects to become transparent and discernable.

3. (Previously presented) The computer-implemented method of claim 1, wherein:

modifying the visibility characteristic automatically causes the first one of the first set of the

plurality of objects to become invisible.

4. (Previously presented) The computer-implemented method of claim 1, wherein:

modifying the visibility characteristic automatically causes the removal of the first one of the

first set of the plurality of objects from a display structure used for constructing the

computer-generated model.

5. (Original) The computer-implemented method of claim 1, wherein:

designating the first one of the second set of the plurality of objects comprises highlighting

the first one of the second set of the plurality of objects.

6. (Currently amended) The computer-implemented method of claim ~~1~~5, wherein:

highlighting the first one of the second set of objects comprises one of displaying a border of

the first one of the second set of the plurality of objects and changing a color of the first

one of the second set of the plurality of objects.

7. (Original) The computer-implemented method of claim 1, wherein:

a pointing device generates the first input data; and

the pointing device generates the second input data.

3

8. (Previously presented) The computer-implemented method of claim 7, wherein:

the pointing device is a mouse device.

9. (Previously presented) The computer-implemented method of claim 1, wherein:

the three-dimensional computer-generated model is a solid model; and

the first one of the first set of the plurality of objects is a face.

10. (Previously presented) The computer-implemented method of claim 9, wherein:

the first one of the second set of the plurality of objects is one of a face, an edge, a vertex, and a surface.

11. (Currently amended) The computer-implemented method of claim 1, wherein:

the three-dimensional computer-generated model is a solid model; .

the first one of the first set of the plurality of objects is one of a vertex or an edge;

~~the first one of the second set of the plurality of objects is a first face adjacent to the first one of the first set of the plurality of objects;~~ and further comprising:

automatically modifying a visibility characteristic of a ~~second~~ first face adjacent to the first one of the first set of the plurality of objects; and

automatically causing at least one of the plurality of objects positioned behind the ~~second~~ first face to be visible.

12. (Previously presented) The computer-implemented method of claim 1, wherein:

subsequent to designating the first one of the second set of the plurality of objects as a first selected object, automatically reverting the first one of the first set of the plurality of objects to an initial visibility state.

13. (Original) The computer-implemented method of claim 1, further comprising:

receiving third input data interpreted as an instruction to select a second one of the second set of the plurality of objects, the second one of the second set identified upon receiving the third input data and by determining that the second one of the second set shares the same location on the computer screen as the cursor; and

highlighting the second one of the second set of the plurality of objects for distinguishing the second one of the second set as a second selected object.

14. (Previously presented) The computer-implemented method of claim 1, further comprising:

receiving third input data interpreted as an instruction to change a visibility characteristic of a second one of the first set of the plurality of objects, the second one of the first set identified upon receiving the third input data and by determining that the second one of the first set shares the same location on the computer screen as the cursor;

automatically modifying the visibility characteristic of the second one of the first set of the plurality of objects to reveal a second one of the second set of the plurality of objects positioned behind the second one of the first set;

receiving fourth input data interpreted as an instruction to select a second one of the second set of the plurality of objects, the second one of the second set identified upon receiving the fourth input data and by determining that the second one of the second set shares the same location on the computer screen as the cursor;

designating the second one of the second set of the plurality of objects as a second selected object; and

highlighting the second one of the second set of the plurality of objects to visually indicate the designation as a second selected object.

15. (Previously presented) The computer-implemented method of claim 14, wherein:

automatically modifying the visibility characteristic of the second one of the first set of the

plurality of objects causes the second one of the first set to become transparent and

discernable.

16. (Previously presented) The computer-implemented method of claim 14, wherein:

automatically modifying the visibility characteristic of the second one of the first set of the

plurality of objects causes the second one of the first set to become invisible.

17. (Previously presented) The computer-implemented method of claim 14, wherein:

automatically modifying the visibility characteristic of the second one of the first set of the

plurality of objects causes the removal of the second one of the first set from a display

structure used for constructing the computer-generated model.

18. (Currently amended) A computer executable program residing on a computer readable

medium, the program comprising instructions causing a computer to:

enable selection of at least one of a plurality of obscured objects;

receive first input data generated by a first button while a cursor positioned in accordance

with data from a pointing device is located over a first object;

determine that the first object is an edge used in the construction of a solid model;

automatically modify a visibility characteristic of at least one of a plurality of faces sharing

the edge to reveal a first one of the plurality of obscured objects positioned in a modeling

space behind at least one of the plurality of faces;

receive second input data generated by a second button while the cursor positioned in

accordance with data from the pointing device is located over the first one of the plurality

of obscured objects;

designate the first one of the plurality of obscured objects as a first selected object wherein

designating comprises highlighting the first one of the plurality of obscured objects; and

automatically modify the visibility characteristic of at least one of the plurality of faces

sharing the edge to a previous visibility state, wherein the visibility characteristic of at

least one of the plurality of faces may be modified independently from the visibility

characteristic of other faces.

19. (Previously presented) The computer executable program of claim 18, wherein:

the first one of the plurality of obscured objects is a face; and

highlighting the first one of the plurality of obscured objects comprises one of changing a

line texture of a plurality of edges of the face and changing a color of the face.

20. (Currently amended) A digital computer comprising:

a memory, data stored in said memory, and control information stored in said memory; and

a data processor for processing said data in accordance with said control information;

wherein,

said control information is arranged to:

process a data structure defining a three-dimensional model comprised of a plurality of

entities used to generate a representation of a real-world three-dimensional object,

wherein each one of the plurality of entities is one of a vertex, an edge, a face, and a

surface;

receive first input data generated by a button used in conjunction with a pointing device

controlling a location of a cursor, wherein the first input data is interpreted as a

command to make one of the plurality of entities invisible, wherein a visibility

characteristic of a face of the plurality of entities may be independently controlled;

automatically suppress display of a first one of the plurality of entities positioned beneath

the cursor when the first input data was received while continuing to display other

ones of the plurality of entities;

7

receive second input data generated by the button, wherein second input data is

interpreted as a command to select one of the other ones of the plurality of entities;

and

designate a second one of the plurality of entities as a selected entity, the second one

designated upon receiving the second input data and determining that the second one

shares a common location with the cursor.

21. (Original) The digital computer of claim 20, wherein:

the second one of the plurality of entities is a face; and

said control information is further arranged to highlight the second one of the plurality of

entities by one of changing a line texture of a plurality of edges of the face and changing

a color of the face.

22. (Previously presented) The digital computer of claim 20, wherein:

the first one of the plurality of entities is a first edge; and further comprising control

information arranged to automatically suppress display of the face that is adjacent to the

first edge.